

The Strands: Nature of Science

Strands	Ideas for integrating these strands
<p>Historical Perspectives</p> <p>Most scientific knowledge and technological advances develop incrementally from the labors of scientists and inventors. Although science history includes accounts of serendipitous scientific discoveries, most development of scientific concepts and technological innovation occurs in response to a specific problem or conflict. Both great advances and gradual knowledge building in science and technology have profound effects on society. Students should appreciate the scientific thought and effort of the individuals who contributed to these advances.</p>	<ul style="list-style-type: none"> • Be sure to include examples of both male and female scientists from diverse backgrounds and cultures. • Study the contributions of key scientists and the human drama surrounding their accomplishments (This is list is not comprehensive.) <ul style="list-style-type: none"> ▪ The obscurity of Mendel’s work until after his death ▪ The interpersonal struggles involved in the discovery of DNA • Modern breakthroughs in gene manipulation for therapeutic purposes.
<p>Nature of Scientific Knowledge</p> <p>Much of what is understood about the nature of science must be explicitly addressed:</p> <p>All scientific knowledge is tentative, although many ideas have stood the test of time and are reliable for our use.</p>	<ul style="list-style-type: none"> • Compare and contrast theories and laws. • Use the theory of biological evolution for further research and as a basis for prediction on other phenomena (the diversity of species, the genetic relationships between species and the fossil record) and use the gene theory as an explanation for relationships between one generation and the next.